OPERATORS

BITWISE OPERATOR-A bitwise operator operates on one or more bit patterns or binary numerals at the level of their individual bits .it is a fast and simple action ,directly supported by the processor ,and is used to manipulate values for comparison and calculations .on simple low cost processor ,typically bitwise operators are substantially faster than division ,several times faster than multiplication ,and sometimes significantly faster than addition.

BIT WISE OPERATORS IN C:

These operators are used to perform bit operations. Decimal values are converted into binary values which are the sequence of bits and bit wise operators work on these bits.

Bit wise operators in C language are & (bitwise AND), | (bitwise OR), ~ (bitwise NOT), ^ (XOR), << (left shift) and >> (right shift).

BELOW ARE THE BIT-WISE OPERATORS AND THEIR NAME IN C LANGUAGE.

1. & – Bitwise AND
2. | – Bitwise OR
3. ~ – Bitwise NOT
4. ^ – XOR
5. << – Left Shift
6. >> – Right Shift

Consider x=40 and y=80. Binary form of these values are given below.

x = 00101000
y= 01010000

All bit wise operations for x and y are given below.

1. x&y = 00000000 (binary) = 0 (decimal)
2. x|y = 01111000 (binary) = 120 (decimal)
3. ~x = 11111111111111111111111111 11111111111111111111111111111111010111 = -41 (decimal)
4. x^y = 01111000 (binary) = 120 (decimal)
5. x << 1 = 01010000 (binary) = 80 (decimal)
6. x >> 1 = 00010100 (binary) = 20 (decimal)

NOTE:

- **Bit wise NOT:** Value of 40 in binary is 00000000000000000000000000000000 00000000000000000000101000000000. So, all 0's are converted into 1's in bit wise NOT operation.
- **Bit wise left shift and right shift:** In left shift operation "x << 1 ", 1 means that the bits will be left shifted by one place. If we use it as "x << 2 ", then, it means that the bits will be left shifted by 2 places.

EXAMPLE PROGRAM FOR BIT WISE OPERATORS IN C:

In this example program, bit wise operations are performed as shown above and output is displayed in decimal format.

Shown in code blocks.

TERNARY OPERATOR –It returns a value or expression included in the second or third part of it. It does not execute the statement .consider the following example where conditional example where conditional expressions x>y returns true and so it executes the first statement after? The ternary operator take three arguments: the first is comparison argument .the second is result upon the true comparison .The result upon a false comparison.

TERNARY OPERATORS IN C:

- Conditional operators return one value if condition is true and returns another value is condition is false.
- This operator is also called as ternary operator.
- Syntax : (Condition? true value: false value);

Example: (A > 100? 0: 1);

- In above example, if A is greater than 100, 0 is returned else 1 is returned. This is equal to if else conditional statements.

EXAMPLE PROGRAM FOR CONDITIONAL/TERNARY OPERATORS IN C:

Shown in code blocks